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Gudesen et al.

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[54] **METHOD FOR PARALLEL WRITING AND READING OF DATA IN AN OPTICAL MEMORY, A WRITING/READING DEVICE FOR USE BY THE METHOD AND USES OF THE METHOD AND THE WRITING/READING DEVICE**

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[57] ABSTRACT

In a method for parallel writing and reading of data in an optical memory, the optical memory includes one or more microlenses for accessing a memory medium, individually addressable elements arranged in one or two-dimensional matrices in a write/read device are activated. The activation of an element physically influences one or more localized areas in a data carrying layer in the memory for writing and reading of data carrying structures in the localized area. Writing and reading is thus performed on the basis of a relationship between the geometric location of the element in the matrix and the position of the localized area(s) in the data carrying layer of the memory. A write/read device includes individually addressable elements which are arranged in one or two-dimensional matrices, the addressable element being arranged to be activated in order to physically influence one or more of the above-mentioned localized areas. Use for such a configuration includes, for example, writing and reading in optical memories which consist of 1–100 microlenses with associated data carrying layers and in optical memories which consist of a transparent spherical particle having a transparent layer to which is applied a data carrying film arranged on one side thereof.

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[52] U.S. Cl. **365/215; 365/106; 365/234**

[58] Field of Search 365/215, 106, 365/234, 112

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62 Claims, 7 Drawing Sheets

